

# Focus on Economics

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## Municipalities under construction: demographic change meets communal infrastructure

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The KfW-Kommunalpanel 2012<sup>1</sup> shows for the first time: municipalities have a considerable need for conversion and demolition. Here demographic change plays a major role – in addition to changed requirements – which will become even more important in the future. The municipalities have already started to address this challenge. According to estimates by the cities, municipalities and districts, approximately EUR 25 billion will be allocated to demolition and conversion efforts over the next five years. The need will continue to grow in the next few years, when the demographic change becomes even more apparent.

### The need to demolish and convert is growing

Demographic change has diverse effects on the municipalities: A declining workforce and a drop in the financial power are only two factors which can negatively impact economic development. Changes in demand, in particular declines in the demand for infrastructure services of the municipalities are further challenges which the municipalities must face.

Changes in the population – in the municipality as a whole or in parts – cause existing infrastructures to no longer be required on the same scale. Supply and demand are sometimes not in sync, structure and the quality of infrastructure are often no longer adequate. This applies in particular if certain trends continue for many years; conversion and demolition efforts then become necessary.

In the KfW-Kommunalpanel 2012 – a representative survey of German municipalities conducted by the Deutsche Institut für Urbanistik on behalf of KfW – the municipalities were surveyed on their needs and planned investments for conversion and demolition given this background. The results show that, particularly in the area of education (schools, adult education as well as childcare) and in road and traffic infrastructure (cf. figure) there is an extensive need for conversion and demolition<sup>2</sup>. Conversion continues to play a much larger role than demolition as it previously did but there is a strong correlation between the two.

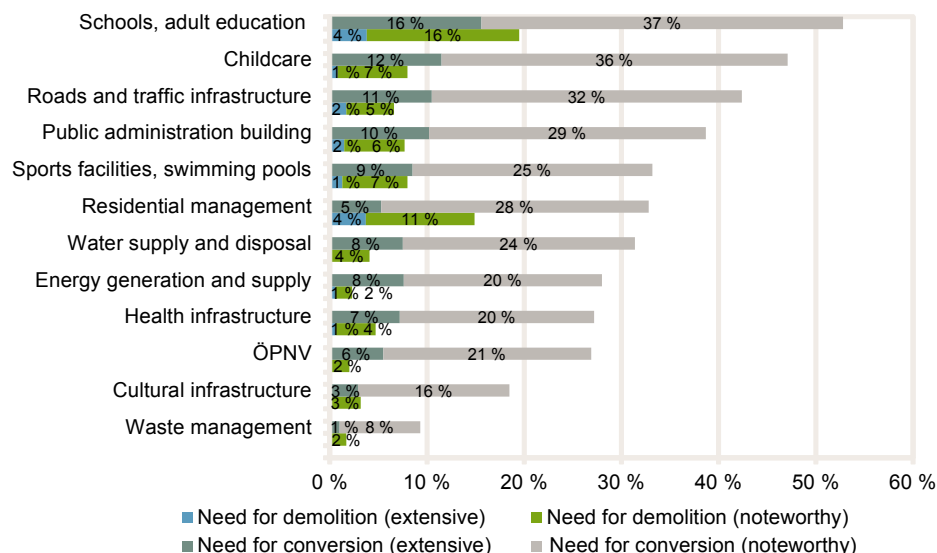
While a need for demolition can be directly attributable to declines in the population (where applicable, individual population groups), the need for conversion

results both from shrinking, aging but also growing municipalities. At the same time, changed requirements or standards – e. g. structural or care standards, energy efficiency – increase the need for conversion. In particular, social infrastructure areas are affected, e. g. if the number of students in school is decreasing, the demand for senior-citizen homes is increasing or access to the town hall must be made barrier-free. For the age-appropriate, barrier-free conversion alone, a current study commissioned by KfW<sup>3</sup> estimated approximately EUR 53 billion as an investment requirement by 2030.

### Situation different for every municipality

Demographic change is not progressing in all municipalities at an equal pace – heavily shrinking municipalities can be found next to prosperous regions. Also parts of cities develop differently and can have very diverse needs for infrastructure development in the coming years. Accordingly, the assessment of a municipality on its development of the population can play a crucial role on how it plans future infrastructure efforts. This

Figure: Demolition and conversion requirements according to the areas of infrastructure



Source: KfW-Kommunalpanel 2012

applies to new projects and to existing infrastructure. Each municipality must develop its own strategy – depending on its population development and priorities.

#### **A lack of demolition results in costs**

Many infrastructures create what is known as residual costs:<sup>4</sup> they occur if the overall costs cannot be reduced with the same scale and time when a decline in demand occurs. In this case, the costs to provide and maintain the services are independent of the number of users. If the number of users decreases, revenues will also decline (e. g. fees or taxes). As a result overall costs remain (high per-capita costs). Due to the long service life of the facilities, these expenditures are usually fixed over a long period of time. This occurs particularly for technical infrastructures (supply and disposal, road and traffic infrastructure). With heavy declines in the population of individual age groups, e. g. the younger population, social infrastructure facilities such as schools and childcare centres which have a low degree of capacity utilisation also cause high per-capita costs.

If necessary conversion and demolition efforts are not conducted, a downward spiral can be set into motion, particularly in structurally weak areas. The existing infrastructure costs are passed on through taxes, contributions and fees to the remaining residents which reduces the attractiveness of the municipality. Unused infrastructures constitute a safety risk and vacant buildings reflect negatively on the adjacent properties. They can result in losses of value in the entire neighbourhood. The attractiveness of the location of the entire municipality suffers as a result, which can entail population losses. The demand for infrastructure continues conversion renovation and demolition increases.

Demographic change therefore does not only result in reduced revenues for the municipalities (i. e. share of income tax and allocations from the municipal financial equalisation system) but it is countered by consistently high expenditures for infrastructure services. Demolition and conversion efforts are therefore essential to save costs on the long term and to avoid vacant properties.<sup>5</sup>

#### **Schools are particularly affected**

More than one half of the municipalities indicate a noteworthy or extensive need for conversion for schools and adult education in the KfW-Kommunalpanel 2012, while 20% see a need for demolition (cf. figure).

A need for conversion can result by adjusting to younger age-group cohorts. The implementation of inclusion, full-day offerings and new standards will play a larger role, however. The larger the communities are, the stronger the need for conversion is considered to be (for cities / communities with more than 50,000 residents, 75% talk about a considerable or noteworthy need for conversion). These communities are clearly more often the maintaining body of the schools (particularly secondary education schools).

It is notable that the need for demolition at schools is estimated to be higher in the western German states than in the eastern German states, which as a whole are shrinking more. One cause seems to be that in the east German states, a portion of the demolition could already be implemented through the city conversion programme. The shrinking process in the surrounding area becomes tangible in a declining numbers of pupils at the corresponding schools. This can result in the closure of entire schools.

Particularly for schools, it becomes clear that demolition is especially necessary where the number of residents is declining as a whole, but at the same time, certain city / municipality areas are particularly negatively impacted. Therefore, "average analyses" on an entire city or city district are not a sound way to determine the investment need. Disparities on a small scale cannot be compensated for by the fact that pupils from parts of the city or communities with a population growth are transported to those with a decline in population. A simultaneous demolition and conversion or extensions or new construction are not rare and increase the need for investment even more.

#### **The focus is also on early childhood education**

Almost every second community sees a need for conversion in childcare facilities, while they happen more rarely for demographic reasons. The need for conversion in childcare facilities occurs, for example, through the necessities of energetic rehabilitation or adjustments of rooms due to U3 requirements (surface standards).

The population losses, on the other hand, are reflected in the need for demolition: there is a need for demolition in every sixth municipality in eastern Germany. During the discussions for the need to catch up in U3 childcare, this finding seems a bit paradoxical. The reason behind this is the comprehensive good endowment of childcare facilities back from GDR times. But even out of the western German municipalities, approximately 20% indicate a need to do demolitions at childcare facilities. Future developments in the population meanwhile result in a declining numbers of children, also in many western German municipalities.

#### **Another area of focus in addition to education is roads and traffic infrastructure**

Over 40% of those surveyed see a greater need for conversion of their municipal traffic infrastructure. 7% even indicate a need for demolition. A need for conversion results, for example, through the modernisation of surface compositions which are no longer adequate, a backlog in the structural endowment (e. g. profiles) or adjustments towards 30 km/h speed limit zones. The need in the municipalities is on an equally high level, regardless of certain location or structural characteristics.

Demolition for streets can mean complete removal but usually means a reduction of road cross sections, the demolition of lanes or related things. Demolition of roads is only a matter of interest to communities; no single district saw such a need for the district streets.

#### **EUR 25 billion planned for demolition and conversion over the next five years**

The KfW-Kommunalpanel 2012 shows

that the necessity for demolition and conversion efforts is considered to be very high. Over the next five years, a total of approx. EUR 5 billion should be allocated to demolition and approx. EUR 20 billion to conversion efforts. Analogical to the areas with biggest investment needs, expenditures are mainly planned for schools, childcare (more than EUR 8 billion in total) and roads / traffic infrastructure (EUR 10 million).<sup>6</sup> The main reasons for these conversion activities seem to be primarily changed requirements. Inclusion and care requirements drive the need for conversion in the education sector; in the traffic infrastructure area there are particularly increased requisites and newer developments that have been a priority in the past few years.

So far, technical infrastructure has gotten relatively little attention (with the exception of roads and traffic infrastructure). Because of the high fixed costs and the associated residual costs, in areas with population declines higher demolition needs (and activities) would be expected for supply and disposal than previously noted. There can be different reasons for this. Pipeline-bound infrastructures such as water supply and disposal as well as electricity are usually built underground so that they are first of all not as visible, and second they are less of an attractiveness and safety risk. In the area of energy generation and supply, the en-

ergy turnaround and its changes still dominate so changes in the population are not the focus. The need for demolition thus becomes smaller for the municipalities.

The need for conversion and in particular demolition efforts can considerably increase in these areas in the course of the continuing population losses to be expected. The (oversized) infrastructure network will no longer be manageable by the municipalities. Here each municipality must keep an eye on its situation and develop its own strategy: What infrastructure services can we provide, what do we want to provide and with what quality? How are synergies possible with other municipalities if we have to provide them? The realistic assessment of the future population development is therefore essential.

#### Financing remains a challenge

The awareness of the future population development, the associated changed demand and the resulting costs for the municipalities seem – probably also due to the financial shortfalls of the municipalities – to have grown. These challenges are already being gradually addressed by the municipalities. In mid-term investment planning, demolition and conversion efforts play a considerable role: EUR 25 billion are planned for these purposes over the next five years. In total, this a quarter of the planned total

investments. Even for age-appropriate conversion, EUR 53 billion are required until 2030 – future investment activity will be increasingly dominated by the demographic change.

The majority of the planned EUR 25 billion will therefore be invested in conversion. Demolition efforts will become more significant in the future. A crucial question is how the municipalities can finance these "backward-oriented" future investments. The problem is a lack of revenue possibilities resulting from a demolition investment. No additional revenue can be generated from these investments for redemption and interest payments. The additional revenues in this case are the lower costs of maintenance and the added attractiveness of the municipalities, which cannot be expressed exactly in numbers. Loan financing also becomes relatively difficult for the banks; obstacles in terms of municipal oversight laws also play a role. Incentives for explicit sources of funding such as the promotion of urban development (city conversion programmes for east and west) continue to be desperately needed as they were before. One thing is clear, one has to start now finding adequate solutions so that municipalities are better prepared to handle the demographic change. ■

<sup>1</sup> You can find a detailed presentation of the survey results at [www.kfw.de/kommunalpanel](http://www.kfw.de/kommunalpanel).

<sup>2</sup> The following definition was provided for "demolition" and "conversion" in the survey questionnaire: "We define 'demolition' as the removal or disposal of facilities in building and underground construction. We define 'conversion' as the adaptation of the infrastructure to changed requirements, without outright modernisation."

<sup>3</sup> Eberlein, M. and A. Klein-Hitpaß (2012): Altersgerechter Umbau der Infrastruktur: Investitionsbedarf der Städte und Gemeinden, Difu-Impulse 6/2012, Berlin (commissioned by KfW).

<sup>4</sup> Cf. also Junkernheinrich, M. and G. Micosatt (2005): Kommunale Daseinsvorsorge bei rückläufiger Bevölkerung, Study for the Ruhr Regional Association, Essen.

<sup>5</sup> Taking resulting demolition / conversion costs into account.

<sup>6</sup> Cf. KfW-Kommunalpanel 2012, p. 48 (german version).